

App. No. : [REDACTED] unknown (based on PCT Application No. PCT/NZ99/00084)
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70 °C at a pH of about 6 to about 8.5 when said protease is a neutral protease, and at a pH of about 3.5 to about 5 when said protease is an acid protease; and

(ii) terminating [the] said hydrolysis [before substantial production of unacceptable bitter flavours] when a degree of hydrolysis of no greater than 15% has been reached by deactivating said protease under conditions sufficiently mild to avoid substantial denaturation of peptides in said hydrolysate.

4. (Amended) A process as claimed in [any one of claims 1 to 3] claim 1 wherein [the] said substrate is sweet whey or sweet whey protein concentrate.

5. (Amended) A process as claimed in [any one of claims 1 to 4] claim 1 wherein the [enzyme capable of hydrolysing the whey proteins] protease is selected from the group consisting of Protease P6, Protease A, Protease M, Peptidase, Neutrase, Validase and AFP 2000 (all as herein defined).

7. (Amended) A process as claimed in claim 1 [5 or claim 6] wherein [the] said hydrolysis [is terminated by high temperature short duration heat treatment] terminating step comprises heat deactivation.

14. (Amended) A process as claimed in [any one of the preceding claims] claim 1 wherein the substrate also contains lactose, in an amount of about 5% by weight or higher.

15. (Amended) A process as claimed in [any one of the preceding claims] claim 1 wherein said lactose content is about 10% by weight or higher.

16. (Amended) A process as claimed in claim 14 [or 15] wherein the amount of lactose present in the substrate is up to about 30% by weight.

17. (Amended) A process as claimed in [any one of claims 14 to 16] claim 14 wherein the amount of lactose present in the substrate is up to about 50% by weight.

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18. (Amended) A process as claimed in [any one of claims 14 to 17] claim 14, wherein the substrate is also treated with lactase and/or β -galactosidase, either before, during or after the whey protein hydrolysis, to hydrolyse the lactose to galactose and glucose and synthesize galacto-oligosaccharides.
19. (Amended) A process as claimed in claim 1 [6 or in any claim dependent from claim 6] wherein the hydrolysate so prepared contains one or more of the bioactive peptides [in the resulting hydrolysate is] selected from the group consisting of AFE, LFSH, ILKEKH, LIVTQ, MKG, LDIQK, VF, ALPMH, VTSTAV, LHLPLP, LVYFPFGPIPNQLPQNIPP and LFRQ.
20. (Amended) A non-bitter soluble [product produced by partial hydrolysis of a substrate containing whey proteins, wherein the product contains bioactive peptides and has a degree of hydrolysis of the whey proteins of below about 10%] whey protein hydrolysate produced by a process according to claim 1.
22. (Amended) A product as claimed in [either of claims 20 or 21] claim 20 wherein the mean particle size of the whey proteins in the product is less than about 30 microns.
24. (Amended) A product as claimed in [any one of claims 20 to 23] claim 20 which is substantially white in appearance.
25. (Amended) A product as claimed in [any one of claims 20 to 24] claim 20 which also contains galactooligosaccharides.
26. (Amended) A product as claimed in [any one of claims 20 to 25] claim 20 wherein one or more of [the] said bioactive peptides is selected from the group consisting of AFE, LFSH, ILKEKH, LIVTQ, MKG, LDIQK, VF, ALPMH, VTSTAV, LHLPLP, LVYFPFGPIPNQLPQNIPP and LFRQ.
27. (Amended) A food product [comprising a product] containing a whey protein hydrolysate as claimed in [any one of claims 20 to 26] claim 20.

30. (Amended) A method of reducing systolic blood pressure in a subject which comprises administering to that subject an effective amount of a product as claimed in [any one of claims 20 to 29] claim 20.

31. (Amended) A method [as claimed in claim 30] of reducing systolic blood pressure in a subject which comprises administering an effective amount of a product according to claim 26.

32. (Amended) A method [as claimed in claim 30] of reducing systolic blood pressure in a subject which comprises administering an effective amount of a peptide or a combination of peptides as claimed in claim 29.

Please add the following new claims:

--33. A process according to claim 7 wherein said heat deactivation comprises heating said hydrolysate for up to ten seconds to a temperature up to 95 °C.

34. A process according to claim 7 wherein said hydrolysis is conducted at a temperature of below 65 °C, wherein said heat deactivating step is conducted at 65 °C to 70 °C for from 10 seconds to 15 minutes.

35. A process according to claim 7 wherein said hydrolysis is conducted at a temperature below 60 °C, wherein said heat deactivating step is conducted at 60 °C to 65 °C for from 10 seconds up to 30 minutes.

36. A process as claimed in claim 1 wherein said hydrolysis terminating step comprises altering the pH of said whey protein-containing substrate to a pH at which said protease is not active.

37. A process as claimed in claim 36 wherein said hydrolysis terminating step includes heat deactivation.

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38. A process as claimed in claim 1 wherein said hydrolysis terminating step comprises subjecting said hydrolysate to ultrafiltration with an ultrafiltration membrane having a nominal molecular weight cutoff in the range of 10-500 kDa.

39. A process as claimed in claim 1 wherein said enzyme is immobilized on an inert support during said hydrolysis step.

40. A process as claimed in claim 39 wherein said inert support is Roehn Eupergit, carrageenan particles, chitosan particles or any other suitable inert support material.

41. A process as claimed in claim 1 wherein the degree of hydrolysis is about 3-5%. --

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Dated: December 14, 2000

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